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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,566	04/19/2004	Virinder Mohan Batra	CHA920040004US1	3188
23550 7590 10/09/2007 HOFFMAN WARNICK & D'ALESSANDRO, LLC 75 STATE STREET 14TH FLOOR ALBANY, NY 12207			EXAMINER GORTAYO, DANGELINO N	
			ART UNIT 2168	PAPER NUMBER
			MAIL DATE 10/09/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/827,566	<b>Applicant(s)</b> BATRA ET AL.	
	<b>Examiner</b> Dangelino N. Gortayo	<b>Art Unit</b> 2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/19/2007 has been entered.

### ***Response to Amendment***

2. In the amendment filed on 6/20/07, claims 1, 7, 8, 15, 16, and 19 have been amended. The currently pending claims considered below are Claims 1-20.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 8-14, 16-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Farmer (WO 02/39486)

**As per claim 1, Farmer** teaches “A system for dynamically implementing a chain of Web services from a client on the World Wide Web to execute a workflow,” (see Abstract and paragraph 0008)

“comprising: a database for storing a list of available Web services, wherein each listed Web service includes a description of a task performed by the Web service, and wherein the Web service comprises a computer program accessible over the World Wide Web, and an input signature and an output signature of the Web service;” (paragraphs 0018, 0022, 0058, wherein a Service Broker accepts requests and provides connections to services, and contains service names, types, and attributes)

“and a selecting system for forming the chain of Web services by selecting a Web service from the list of available Web services for each of a plurality of tasks in the workflow,” (paragraphs 0040, 0060, 0061, 0062, 0063, wherein services can be linked together and service attributes and classes are used for interaction)

“wherein the workflow comprises a series of linked tasks and a specified input and output format,” (paragraphs 0040, 0042, 0043, 0045, 0046, 0053, wherein services interact and identify with each other through attributes, and are encapsulated to interact with each other)

“wherein the selecting system dynamically matches the input signature of a first Web service with the output signature of the adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services.” (paragraph 0062, 0071, 0072, 0073, 0074, 0075, 0076, wherein the workflow

of services is dynamically created based on selected data and present components, and a wrapper class is used to integrate services)

**As per claim 2, Farmer teaches** “the workflow comprises a microarray analysis workflow.” (Figure 2, paragraphs 0049, 0086)

**As per claim 3, Farmer teaches** “a workflow generator for creating the workflow.” (paragraphs 0049, 0050)

**As per claim 4, Farmer teaches** “the list of available Web services resides locally with the client.” (paragraphs 0039, 0044)

**As per claim 5, Farmer teaches** “a system for collecting and storing available Web services data.” (paragraphs 0018, 0022)

**As per claim 6, Farmer teaches** “a system for inputting sequence data into the workflow execution.” (paragraph 0067)

**As per claim 8, Farmer teaches** “A program product, stored on a recordable medium for executing a workflow by dynamically implementing Web services from a client on the World Wide Web,” (see Abstract and paragraph 0008)

“comprising: means for storing a list of available Web services, wherein each listed Web service includes a description of a task performed by the Web service, and an input signature and an output signature of the Web service;” (paragraphs 0018, 0022, 0058, wherein a Service Broker accepts requests and provides connections to services, and contains service names, types, and attributes)

“and means for forming a chain of Web services by selecting a Web service from the list of available Web services for each of a plurality of tasks in the workflow,” (paragraphs 0040, 0060, 0061, 0062, 0063, wherein services can be linked together and service attributes and classes are used for interaction)

“wherein the workflow comprises a series of linked tasks and a specified input and output format,” (paragraphs 0040, 0042, 0043, 0045, 0046, 0053, wherein services interact and identify with each other through attributes, and are encapsulated to interact with each other)

“wherein the forming means matches input signature of a first Web service and the output signature of an adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services.” (paragraph 0062, 0071, 0072, 0073, 0074, 0075, 0076, wherein the workflow of services is dynamically created based on selected data and present components, and a wrapper class is used to integrate services)

**As per claim 9, Farmer teaches** “the workflow comprises a microarray analysis workflow.” (Figure 2, paragraphs 0049, 0086)

**As per claim 10, Farmer teaches** “the workflow comprises a bioinformatics workflow.” (paragraphs 0008)

**As per claim 11, Farmer teaches** “means for creating the workflow.” (paragraphs 0049, 0050)

**As per claim 12, Farmer teaches** “the storage means resides locally with the client.” (paragraphs 0039, 0044)

**As per claim 13, Farmer teaches** “means for collecting and storing available Web services data in said storage means.” (paragraphs 0018, 0022)

**As per claim 14, Farmer teaches** “a system for inputting sequence data into the workflow execution.” (paragraph 0067)

**As per claim 16, Farmer teaches** “A method for executing a bioinformatics workflow from a client on the World Wide Web,” (see Abstract and paragraph 0008)

“comprising: providing a workflow having a plurality of linked tasks and a specified input and output format;” (paragraphs 0040, 0042, 0043, 0045, 0046, 0053, wherein services interact and identify with each other through attributes, and are encapsulated to interact with each other)

“providing a list of known bioinformatics Web services, wherein each listed Web service includes a description of a task performed by the Web service, and an input signature and an output signature of the Web service, further wherein the Web service comprises a computer program accessible over the World Wide Web;” (paragraphs 0018, 0022, 0058, wherein a Service Broker accepts requests and provides connections to services, and contains service names, types, and attributes)

“selecting a Web service from the list of known bioinformatics Web services for each task in the bioinformatics workflow to form a chain of Web services, wherein the selecting step dynamically matches the input signature of a first Web service with the output signature of an adjacent Web service to ensure that each selected Web service is compatible with the adjacent Web service in the chain of Web services” (paragraph

0062, 0071, 0072, 0073, 0074, 0075, 0076, wherein the workflow of services is dynamically created based on selected data and present components, and a wrapper class is used to integrate services)

“and calling each selected Web service in the chain to execute the bioinformatics workflow.” (paragraphs 0040, 0060, 0061, 0062, 0063, wherein services can be linked together and service attributes and classes are used for interaction to perform a user query)

**As per claim 17, Farmer** teaches “the bioinformatics workflow comprises a microarray analysis.” (Figure 2, paragraphs 0049, 0086)

**As per claim 18, Farmer** teaches “the list of known bioinformatics Web services resides locally to the client.” (paragraphs 0039, 0044)

**As per claim 20, Farmer** teaches “the step of calling each selected Web service includes the step of providing a set bioinformatics data to a first Web service in the chain in the specified input format.” (paragraph 0067)

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



6. Claims 7, 15, and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Farmer (WO 02/39486) in view of Yung et al. (US Patent 6,909,974 B2)

As per claim 7, Farmer is disclosed as per claim 1 above. Farmer does not teach “the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data.”

Yung teaches “the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data.” (Figure 10, 12A, 12B, 13, column 12 line 20 – column 13 line 2, column 19 line 60 – column 20 line 12, wherein XML format is used to wrap information and provide communication between heterogeneous services in a bioinformatics system, particularly XML input and output files).

It would have been obvious to one of ordinary skill in the art to combine Farmer's method of allowing interoperation of heterogeneous bioinformatics software services with Yung's ability to utilize XML formatted files in communicating between different services linked in a workflow. This gives the user the ability to use XML when inputting and outputting bioinformatics data in a workflow to provide the user of a bioinformatics system a commonly used communication format, XML, and allows the user to define the tags that identify attributes. The motivation for doing so would be to provide a centralized biological information flow management system that requires less human involvement and the possibility of error than previous systems (column 1 lines 44-63)

**As per claim 15, Farmer** is disclosed as per claim 1 above. Farmer does not teach "the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data."

Yung teaches "the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data." (Figure 10, 12A, 12B, 13, column 12 line 20 – column 13 line 2, column 19 line 60 – column 20 line 12, wherein XML format is used to wrap information and provide communication between heterogeneous services in a bioinformatics system, particularly XML input and output files).

It would have been obvious to one of ordinary skill in the art to combine Farmer's method of allowing interoperation of heterogeneous bioinformatics software services with Yung's ability to utilize XML formatted files in communicating between different services linked in a workflow. This gives the user the ability to use XML when inputting and outputting bioinformatics data in a workflow to provide the user of a bioinformatics system a commonly used communication format, XML, and allows the user to define the tags that identify attributes. The motivation for doing so would be to provide a centralized biological information flow management system that requires less human involvement and the possibility of error than previous systems (column 1 lines 44-63)

As per claim 19, Farmer is disclosed as per claim 1 above. Farmer does not teach “the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data.”

Yung teaches “the input signature comprises a FASTA XML format for a set of input sequences and the output signature comprises an XML file format for providing spatial microarray placement data.” (Figure 10, 12A, 12B, 13, column 12 line 20 – column 13 line 2, column 19 line 60 – column 20 line 12, wherein XML format is used to wrap information and provide communication between heterogeneous services in a bioinformatics system, particularly XML input and output files).

It would have been obvious to one of ordinary skill in the art to combine Farmer’s method of allowing interoperation of heterogeneous bioinformatics software services with Yung’s ability to utilize XML formatted files in communicating between different services linked in a workflow. This gives the user the ability to use XML when inputting and outputting bioinformatics data in a workflow to provide the user of a bioinformatics system a commonly used communication format, XML, and allows the user to define the tags that identify attributes. The motivation for doing so would be to provide a centralized biological information flow management system that requires less human involvement and the possibility of error than previous systems (column 1 lines 44-63).

***Response to Arguments***

7. Applicant's arguments with respect to the 35 U.S.C. 102 rejection of claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Garner et al. (US Publication 2003/0033290 A1)

Bialic (US Patent 6,665,685 B2)

Birkett et al. (US Patent 7,110,890 B2)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dangelino N. Gortayo whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

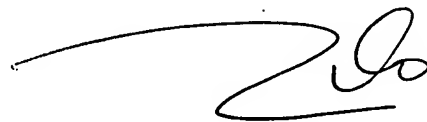
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dangelino N. Gortayo  
Examiner



Tim T. Vo  
SPE



TIM VO  
SUPERVISORY PATENT EXAMINER  
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